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(54) INFORMATION-RECEIVING DEVICE AND COMPUTER-READABLE RECORDING MEDIUM RECORDED WITH INFORMATION RECEIVING PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce the load on a server side who distributes information of contents, etc., and moreover to receive the information at a low cost.

SOLUTION: A user client 20 can receive desired contents from a content server distributing plural contents via the Internet 30, through a stage where a content list regarding plural distributable contents is received from a content list server 11, a stage where a content request list for requesting reception is generated according to the result of comparison between the received content list and contents having been received, a stage where contents corresponding to the content request list are received from the content server 10, and a stage where the saved list 21 is updated according to the received contents.

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2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] In the information receiving set which receives the information on desired from the server which distributes two or more information A delivery information list receiving means to receive the delivery information list about said two or more information which can be distributed from said server, A non-receipt information list creation means to create a non-receipt information list based on the comparison result of said delivery information list and the information [that it receives] list about information [finishing / reception], A non-receipt information receiving means to store in a database after receiving the information corresponding to said non-receipt information list from said server, The information receiving set characterized by having an updating means to update said information [that it receives] list, based on the information received by said non-receipt information receiving means.

[Claim 2] The information receiving set according to claim 1 characterized by

having a line control means to cut the connection circuit to said server, and an information use means to use the information stored in said database during line disconnection after reception by said non-receipt information receiving means was completed.

[Claim 3] Said line control means is an information receiving set according to claim 2 which the connection circuit to said server is once cut, and communication link cost carries out a line connection to a cheap time zone to said server, and is characterized by making said non-receipt information receiving means perform information reception after creating said non-receipt information list.

[Claim 4] It is the record medium which recorded the information receiving agent applied to the information receiving set which receives the information on desired from the server which distributes two or more information and in which computer reading is possible. The delivery information list receiving process of making the delivery information list about said two or more information which can be distributed receiving from said server, The non-receipt information list creation process of making a non-receipt information list creating based on the comparison result of said delivery information list and the information [that it

receives] list about information [finishing / reception], The non-receipt information receiving process made to store in a database after making the information corresponding to said non-receipt information list receive from said server, The record medium which recorded the information receiving agent for making a computer perform the updating process which makes said information [that it receives] list update based on the information received at said non-receipt information receiving process and in which computer reading is possible.

[Claim 5] The record medium which recorded the information receiving agent according to claim 4 characterized by including the line control process which makes the connection circuit to said server cut, and the information use process of making the information stored in said database during line disconnection using after the reception in said non-receipt information receiving process is completed and in which computer reading is possible.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the record medium which recorded the information receiving set and information receiving agent for reducing the processing load by the side of a server especially and in which computer reading is possible about the record medium which recorded the information receiving set and information receiving agent for receiving

information from a server in a client/server system (download) and in which computer reading is possible.

[0002] Recently, the load of the server which distributes information, such as contents, to a user client is also in the inclination which increases by leaps and bounds with the explosive spread of the Internet. In the former, management of permuting a server by the highly efficient thing was taken as an approach of coping with increase of the load of a server. However, since it will be expected from now on that it increases [of a server] increasingly, with the solution of permuting a server by the highly efficient thing, cost snowballs and does not serve as a fundamental solution. Therefore, it is anxious for the means for solving this problem effectively, and the approach conventionally.

[0003]

[Description of the Prior Art] Conventionally, when distributing contents (music, an image, computer program, etc.) to a contents user for pay (or no charge), the client/server system built through the Internet is used. This client/server system consists of a server installed in the contents distribution entrepreneur side, and two or more clients which are installed in two or more contents user side, respectively, and receive distribution of contents from the above-mentioned

server through the Internet. A contents user is the user registered into the contents distribution entrepreneur side.

[0004] In the above-mentioned configuration, if a contents distribution demand is advanced from a client to a server, a server will be determined by referring to the distribution hysteresis information on past for which contents should be distributed to which contents user according to a contents distribution demand, after performing user authentication. Next, a server distributes the contents concerned to the client by the side of the contents user concerned through the Internet based on the above-mentioned reference result. After distribution is completed, a server updates the above-mentioned distribution hysteresis information. Thus, in the former, by the server side, the centralized control of two or more distribution hysteresis information that it corresponds for two or more contents users of every, respectively was carried out, and each distribution hysteresis information was updated.

[0005] Moreover, as a client, the mobile computing devices (a portable telephone, a PHS (Personal Handyphone System) terminal, PDA (Personal Digital Assistant), etc.) which have the contents reception and the regenerative function other than a personal computer are used. In the case of these mobile

computing devices, contents are reproduced after receiving distribution of contents from a server through a wireless circuit and the Internet.

[0006]

[Problem(s) to be Solved by the Invention] By the way, by the former, as mentioned above, since management and an update process of distribution hysteresis information are intensively performed by the server side, the load of a server increases with increase of the number of clients. Thus, when the load of a server increases and performance falls, a server is permuted by the highly efficient thing, or a server is extended and management of planning a load distribution is taken.

[0007] However, with the solution for such load increase, there is a problem that the cost about contents distribution costs very dearly, and a contents distribution entrepreneur's profit profile will be worsened. Furthermore, with this solution, there was also a problem that a contents distribution service had to be temporarily stopped with a server permutation and extension.

[0008] Moreover, for a contents user, when distribution was received in the time zone with much traffic of a circuit since it was necessary to connect a circuit while having received distribution of contents, there was a problem that

communication link cost increased. Furthermore, as a client, when mobile computing devices were used, since the band of a wireless circuit was comparatively narrow, the data transfer rate was slow, distribution of contents took time amount very much, communication link cost increased, and there was a problem of not being suitable for distribution of the contents which need real-time playback.

[0009] This invention was made in view of the above, reduces the load by the side of the server which distributes information, such as contents, and aims at offering the record medium which recorded the information receiving set and information receiving agent which can moreover receive information by low cost and in which computer reading is possible.

[0010]

[Means for Solving the Problem] In the information receiving set which receives the information on desired from the server to which this invention distributes two or more information in order to attain the above-mentioned purpose A delivery information list receiving means to receive the delivery information list about said two or more information which can be distributed from said server, A non-receipt information list creation means to create a non-receipt information list based on

the comparison result of said delivery information list and the information [that it receives] list about information [finishing / reception], After receiving the information corresponding to said non-receipt information list from said server, it is characterized by having a non-receipt information receiving means to store in a database, and an updating means to update said information [that it receives] list based on the information received by said non-receipt information receiving means.

[0011] According to this invention, if a delivery information list is received by the delivery information list receiving means, the non-receipt information list about the information (difference information) which is not yet received by the non-receipt information list creation means based on the comparison result of the above-mentioned delivery information list and an information [that it receives] list will be created. Next, by the non-receipt information receiving means, it is received from a server and the information corresponding to a non-receipt information list is stored in a database. After this reception is completed, an updating means updates an information [that it receives] list.

[0012] Thus, according to this invention, while being able to reduce management of information [finishing / reception], and the load by the side of the server

which distributes information, such as contents, since the information which should be received from a server was managed not by the server but by the receiving side, the cost concerning server extension can be reduced.

[0013]

[Embodiment of the Invention] The gestalt of 1 operation of the record medium which recorded hereafter the information receiving set and information receiving agent which start this invention with reference to a drawing and in which computer reading is possible is explained to a detail.

[0014] Drawing 1 is the block diagram showing the outline configuration of the gestalt of the 1 operation concerning this invention. In this drawing, the client/server system which consists of a contents server 10 which performs management and distribution, and accounting management of contents, and a user client 20 connected to this contents server 10 through the Internet 30 is illustrated. In addition, two or more user clients 20 are connected to the Internet 30 in fact.

[0015] The contents server 10 is installed in the contents distribution entrepreneur side, and consists of a contents list server 11, an accounting server 12, and a contents distribution server 13. The contents list server 11 is a server

which holds the list (a contents list is called hereafter) of all contents which can be distributed to a contents user, and distributes a contents list to the user client 20 through the Internet 30 according to the demand from the user client 20. The accounting server 12 publishes the access key at the time of receiving distribution of contents while managing the accounting information to a contents user on the occasion of use of charged contents.

[0016] After the contents distribution server 13 holds all the contents (file of the contents itself) carried by the contents list mentioned above and enciphers the contents concerned demanded out of all contents according to the demand from the user client 20, it is a server distributed to the user client 20 through the Internet 30. here -- being careful -- it is the point performed by the user client 20 side, without performing management and an update process of contents of distribution hysteresis entirely by the contents server 10 side.

[0017] On the other hand, the user client 20 is the personal computer installed in the contents user side, and is equipped with the function to receive contents through the Internet 30, the function which reproduces contents, the function to manage the hysteresis of contents [finishing / reception] in the past, etc. This user client 20 has held and managed the preservation list 21, the preservation

contents 22, and the access key list 23. These preservation lists 21, the preservation contents 22, and the access key list 23 are saved at storage (illustration abbreviation).

[0018] The preservation list 21 is the list of contents [finishing / reception], i.e., the hysteresis information on contents [finishing / reception in the past]. The preservation contents 22 are contents [finishing / reception in the past] (file of the contents itself). In case the access key list 23 receives distribution of charged contents, it is a list of access keys published from the accounting server 12.

[0019] It explains to it, referring to the sequence diagram shown in drawing 2 to the next about the example 1 of outline actuation of the gestalt of 1 operation. This example 1 of outline actuation explains the case of the specific charge as a charging system of charged contents. At the step SA 1 shown in drawing 2 , the user client 20 requires a contents list from the contents list server 11. At a step SA 2, the contents list server 11 transmits a contents list to the user client 20.

[0020] At a step SA 3, the user client 20 compares with the preservation list 21 the contents list received from the contents list server 11, and creates a contents demand list. This contents demand list is the difference of a contents list and the

preservation list 21, and is contents which are not contained in the preservation list 21, and is a list of the contents contained in the contents list.

[0021] At a step SA 4, the user client 20 transmits the above-mentioned contents demand list and the user ID for identifying the contents user concerned to the accounting server 12. At a step SA 5, after charging the accounting server 12 to the contents user concerned based on user ID, it creates the list of access keys corresponding to the contents carried by the contents demand list (an access key list is called hereafter).

[0022] At a step SA 6, the accounting server 12 transmits the created access key list to the user client 20. At a step SA 7, the user client 20 saves the received access key list at storage. Thereby, the newly received access key list is added to the access key list 23.

[0023] At a step SA 8, the user client 20 requires new contents by transmitting an access key list to the contents distribution server 13, after picking out the newly received access key list from the access key list 23. At a step SA 9, the contents distribution server 13 checks each access key contained in an access key list. When this check result is O.K., at a step SA 10, the contents distribution server 13 transmits the new contents corresponding to an access key to the user

client 20.

[0024] If the above-mentioned contents are received, at a step SA 11, the user client 20 saves the contents which received at storage. Thereby, the contents which newly received are added to the preservation contents 22. Moreover, the user client 20 performs update process of adding the information about the contents which newly received to the preservation list 21. And a contents user chooses the contents of hope from the preservation contents 22, after cutting a circuit with the Internet 30. Thereby, the contents concerned are reproduced.

[0025] It explains to it, referring to the sequence diagram shown in drawing 3 to the next about the example 2 of outline actuation of the gestalt of 1 operation. This example 2 of outline actuation explains the case of fixed amount accounting as a charging system of charged contents. Therefore, in the example 2 of outline actuation, since it is not concerned with the count of distribution of contents but is charged at a fixed amount, the accounting server 12 becomes unnecessary. In this case, the contents list server 11 publishes an access key. At the step SB 1 shown in drawing 3 , the user client 20 requires a contents list by transmitting user ID to the contents list server 11. At a step SB 2, the contents list server 11 checks user ID, and, in this check result =O.K., performs processing of a step SB

3.

[0026] At a step SB 3, the contents list server 11 transmits a contents list and an access key list to the user client 20. This access key list is a list of access keys corresponding to all the contents carried by the contents list. At a step SB 4, the user client 20 saves the received access key list at storage. Thereby, the newly received access key list is added to the access key list 23.

[0027] Next, the user client 20 compares with the preservation list 21 the contents list received from the contents list server 11, and chooses the contents which receive distribution. That is, the user client 20 chooses the contents of the difference of a contents list and the preservation list 21. Therefore, selected contents are contents which are not contained in the preservation list 21, and are contents contained in the contents list.

[0028] At a step SB 5, the user client 20 requires new contents by transmitting an access key list to the contents distribution server 13, after picking out the access key list corresponding to the contents chosen at a step SB 4 from the access key list 23. At a step SB 6, the contents distribution server 13 checks each access key contained in an access key list. When this check result is O.K., at a step SB 7, the contents distribution server 13 transmits the new contents

corresponding to an access key to the user client 20.

[0029] If the above-mentioned contents are received, at a step SB 8, the user client 20 saves the contents which received at storage. Thereby, the contents which newly received are added to the preservation contents 22. Moreover, the user client 20 performs update process of adding the information about the contents which newly received to the preservation list 21. And a contents user chooses the contents of hope from the preservation contents 22, after cutting a circuit with the Internet 30. Thereby, the contents concerned are reproduced.

[0030] Next, the concrete configuration of the gestalt of the 1 operation concerning this invention is explained in full detail with reference to drawing 4 . In this drawing, the client/server system which consists of user clients 600 and 700 connected to the contents list server 100 and the contents servers 200 and 300 which perform management and distribution, and accounting management of contents, and these contents list servers 100 and the contents servers 200 and 300 through the Internet 500, and a contents distribution client 400 is illustrated.

[0031] The contents list server 100 is installed in the contents distribution entrepreneur side, and is equipped with the same function as the contents list server 11 and the accounting server 12 (refer to drawing 1) which were

mentioned above. Moreover, the contents list server 100 stores in contents list / accounting database 110 the list (a contents list is called hereafter) of all contents which can be distributed, and the charged accounting information and the charged access key about contents to a contents user.

[0032] The contents server 200 is a server which distributes the contents demanded from the user clients 600 or 700 through the Internet 500 out of two or more contents (file of the contents itself) stored in the contents database 210. The contents server 300 is a server which distributes the contents demanded from the user client 600 or the user client 700 through the Internet 500 like the contents server 200 out of two or more contents (file of the contents itself) stored in the contents database 310.

[0033] The contents distribution client 400 is a client which is made accessible at contents list / accounting database 110, the contents database 210, and the contents database 310, and updates a contents list, accounting information, an access key, contents, etc.

[0034] On the other hand, the user client 600 is the personal computer installed in the contents user side, and is equipped with the function to receive contents through the Internet 500, the function which reproduces contents, the function to

manage the hysteresis of contents [finishing / reception] in the past, etc. The store 660 for storing various information, the input sections 670, such as a keyboard and a mouse, and the displays 680, such as CRT (Cathode-Ray Tube) and LCD (Liquid Crystal Display), are connected to this user client 600.

[0035] In the user client 600, the Maine control section 610 performs control about reception and playback of contents. In this Maine control section 610, the communication link queue 640 is a queue of the communication link processor limited through the Internet 500. The WWW (World Wide Web) control section 620 performs control about reception and playback of contents by cooperation with a browser 650. The language-processing engine 630 performs various communications processing. A browser 650 is for perusing contents.

[0036] Moreover, the script storing region 661, the contents storing region 662, the preservation list storing region 663, and the other storing region 664 are secured to storage 660. The script which described a certain procedure is stored in the script storing region 661. The contents (file of the contents itself) which received are stored in the contents storing region 662.

[0037] The preservation contents list information 850 which is the list of contents [finishing / reception], i.e., the hysteresis information on contents [finishing /

reception in the past], and which was shown in drawing 6 (a) is stored in the preservation list storing region 663. The preservation contents list information 850 shown in this drawing consists of names (list of contents files) of contents file A-D matched with the contents identifier (the content ID C1, and IDC5 and IDC7) and contents identifier for identifying contents.

[0038] In addition, it replaces with the above-mentioned preservation contents list information 850, and you may make it store in the preservation list storing region 663 the preservation contents list information 860 on the directory format shown in drawing 6 (b) with the gestalt of 1 operation. The content ID C1 which is a contents identifier for this preservation contents list information 860, and IDC5 And IDC7 It considers as the directory name. therefore, content ID C1 **** -- contents file A-C matches -- having -- **** -- content ID C5 **** -- the contents file D is matched. These contents file A-D is stored in the contents storing region 662.

[0039] In addition, the various information on other (for example, user ID [for identifying a contents user] a) is stored in the storing region 664. The user client 700 is installed in another contents user side, and is considered as the same configuration as the user client 600. Storage 710, the input section 720, and a

display 730 are connected to this user client 700.

[0040] The example 1 of concrete actuation of the gestalt of 1 operation is explained to it, referring to drawing 5 - drawing 10 to the next. Drawing 7 is a sequence diagram explaining the example 1 of concrete actuation of the gestalt of 1 operation, and drawing 8 is drawing showing screen transition of the display 680 shown in drawing 4 . Drawing 9 is a flow chart explaining the actuation of the user client 600 shown in drawing 4 . This example 1 of concrete actuation explains the case of the specific charge as a charging system of charged contents.

[0041] First, if the shortcut 901 for directing initiation of reception and playback of contents is clicked by the contents user in the condition that the shortcut menu screen 900 shown in drawing 8 is displayed on the display 680 (refer to drawing 4), the selection screen 910 will be displayed on a display 680 by control of the Maine control section 610. The connectionless carbon button 911 and the connection carbon button 912 are displayed on this selection screen 910.

[0042] The connectionless carbon button 911 is a carbon button for perusing the contents stored in the contents storing region 662 by the browser 650, without accessing the Internet 500. On the other hand, the connection carbon button 912

is a carbon button for accessing the Internet 500, in order to receive contents from the exterior through the Internet 500 (download).

[0043] In this case, if the connection carbon button 912 is clicked by the contents user, the line connection of the user client 600 will be carried out to the Internet 500, and the download screen 920 showing ** which is performing processing which downloads external contents (reception) will be displayed on a display 680. In this download screen 920, the cutting carbon button 921 is a carbon button for interrupting download processing.

[0044] Moreover, a click of the connection carbon button 912 takes out initiation directions with the step SC 1 shown in drawing 7 to the Maine control section 610 of the user client 600. Thereby, at a step SC 2, the Maine control section 610 is user ID [for identifying a contents user from the other storing region 664 of storage 660] a. It reads. At a step SC 3, the WWW control section 620 transmits the demand information 800 shown in drawing 5 (a) to the contents list server 100 that a contents list should be required. This demand information 800 consists of a user-identification child (user ID a) and contents of a demand (contents list request).

[0045] At a step SC 4, the contents list server 100 is user ID [within the received

demand information 800] a. Processing to attest is performed. After this authentication processing is completed normally, at a step SC 5, the contents list server 100 reads the contents list 810 shown in drawing 5 (b) from contents list / accounting database 110.

[0046] This contents list 810 is an information list of all contents which can be distributed to the user client 600 from the contents server 200 (contents server 300). Specifically, the contents list 810 consists of the contents identifier (content ID C1 - IDCn) for identifying contents, a name (name1 - namen) of contents, the amount of money (charge1 - chargen) of charged contents, and an effective date (date1 - daten) that is a contents use term.

[0047] Next, at a step SC 6, the contents list server 100 transmits the contents list 810 to the Maine control section 610 through the Internet 500. If this contents list 810 is received, at a step SC 7, the Maine control section 610 will read the preservation contents list information 850 (refer to drawing 6 (a)) as a preservation list from the preservation list storing region 663.

[0048] At a step SC 8, the Maine control section 610 calculates the difference of the contents list 810 and the preservation contents list information 850 which were received, and is taken as the contents demand list 820 on which the count

result was shown in drawing 5 (c). This contents demand list 820 is contents which are not contained in the preservation contents list information 850, and is a list of the contents contained in the contents list 810. Specifically, the contents demand list 820 consists of the contents identifiers and user-identification children for identifying the contents which should be demanded.

[0049] At a step SC 9, the Maine control section 610 displays the contents demand list 820 on a display 680, and takes a check to a contents user. If a check of a contents user can be taken at a step SC 10, at a step SC 11, the Maine control section 610 will transmit the contents demand list 820 to the contents list server 100 through the Internet 500.

[0050] At a step SC 12, the contents demand list 820 is user-ID a Based (user-identification child), and the contents list server 100 performs accounting to the contents user concerned. At a step SC 13, the contents list server 100 transmits the access key list 830 (refer to drawing 5 (d)) including the information on the access key corresponding to the contents identifier carried by the contents demand list 820 etc. This access key list 830 consists of URL (Uniform Resource Locator) (URL1 - URLn) and the access keys (access key K1 -Kn) in which a contents identifier (content ID C1 - IDCn) and the storing location of the

contents concerned are shown.

[0051] And if the access key list 830 is received, at a step SC 14, the Maine control section 610 will require new contents by transmitting the list of access keys to the contents server 200 (there being also a case of the contents server 300), after picking out the list of access keys from the access key list 830. At a step SC 15, the contents server 200 checks each access key contained in an access key list, when this check result is O.K., searches the contents database 210 and takes out the contents corresponding to an access key.

[0052] At a step SC 16, the contents server 200 distributes the enciphered contents to the user client 600 through the Internet 500. At a step SC 17, the Maine control section 610 decodes the enciphered contents using an access key, after receiving the above-mentioned contents. Moreover, the Maine control section 610 cuts a circuit with the Internet 500.

[0053] At a step SC 18, the Maine control section 610 stores the contents which received in the contents storing region 662. Thereby, the contents which newly received are added to the contents storing region 662. Moreover, the Maine control section 610 performs update process of adding the information about the contents which newly received to the preservation contents list information 850.

[0054] These received contents are displayed on a display 680 by the browser 650 as a browser screen 930 shown in drawing 8 . Here, if the termination carbon button 941 of the selection screen 940 is clicked by the contents user, at a step SC 19, the Maine control section 610 will end a series of processings. In this selection screen 940, the termination carbon button 942 after transmission is a carbon button for terminating a series of processings, after transmitting the data generated during use of contents to external equipment.

[0055] Here, actuation of the user client 600 in processing to the step SC 1 mentioned above - a step SC 18 is explained in full detail with reference to the flow chart shown in drawing 9 and drawing 10 . At the step SD 1 shown in drawing 9 , the WWW control section 620 will judge whether the WWW control section 620 is a script demand in a step SD 2, if a HTTP (Hypertext Transfer Protocol) access request is received by clicking the shortcut connectionless carbon button 911 or the connection carbon button 912 shown in drawing 8 . A script demand here is a demand concerning use (distribution and playback) of contents based on the script stored in the script storing region 661.

[0056] In this case, when the decision result of a step SD 2 is "Yes", at a step SD 3, the WWW control section 620 reads a script from the script storing region 661,

and passes this to the language-processing engine 630. At a step SD 4, it judges whether the language-processing engine 630 needs communications processing. In this case, if the connection carbon button 912 shall be clicked, communications processing is required between the Internet 500. Therefore, the language-processing engine 630 sets the decision result of a step SD 4 to "Yes."

[0057] On the other hand, when the connectionless carbon button 911 is clicked, since communications processing is unnecessary, the language-processing engine 630 sets the decision result of a step SD 4 to "No." At a step SD 5, after the WWW control section 620 reads contents [finishing / reception] from the contents storing region 662 and creates this as browser response data, it passes this browser response data to a browser 650. Thereby, the contents concerned are perused through the browser screen 930 (refer to drawing 8).

[0058] In this case, at a step SD 6, the language-processing engine 630 transmits the demand information 800 shown in drawing 5 (a) to the contents list server 100 through the Internet 500. At a step SD 7, the contents list 810 (refer to drawing 5 (b)) from the contents list server 100 is received. a step SD 8 -- the language-processing engine 630 -- difference -- computation (step SC 8: refer to drawing 7) is performed.

[0059] That is, at the step SE 1 shown in drawing 10 , the language-processing engine 630 creates the list Ln (content ID C1 - IDCn) of contents identifiers from the received contents list 810 (refer to drawing 5 (b)). At a step SE 2, the language-processing engine 630 creates the list LO of contents identifiers (content ID C2, IDC5, IDC7) from the preservation contents list information 850 (refer to drawing 6 (a)) as a preservation list from the preservation list storing region 663. At a step SE 3, it is the above-mentioned list Ln. LO Difference is taken and the contents demand list 820 (refer to drawing 5 (c)) is created.

[0060] Return and the language-processing engine 630 judge whether if it puts in another way whether the contents demand list created at a step SE 3 is empty, it will be in a condition without difference to drawing 9 , and when this decision result is "Yes", processing of a step SD 5 is performed. In this case, when the decision result of a step SD 9 is "No", the language-processing engine 630 performs processing for downloading contents by transmitting the contents demand list 820 to the contents list server 100.

[0061] Henceforth, contents download from the contents server 200 to the user client 600 by processing of the step SC 11 mentioned above - a step SC 16 (refer to drawing 7) (reception). At a step SD 11, the language-processing

engine 630 updates the preservation contents list information 850 while storing the contents which received in the contents storing region 662.

[0062] It explains to it, referring to the sequence diagram shown in drawing 11 to the next about the example 2 of concrete actuation of the gestalt of 1 operation. This example 2 of concrete actuation explains the case of fixed amount accounting as a charging system of charged contents.

[0063] First, if the shortcut 901 for directing initiation of reception and playback of contents is clicked by the contents user in the condition that the shortcut menu screen 900 shown in drawing 8 is displayed on the display 680 (refer to drawing 4), the selection screen 910 will be displayed on a display 680 by control of the Maine control section 610. In this case, if the connection carbon button 912 is clicked by the contents user, the line connection of the user client 600 will be carried out to the Internet 500, and the download screen 920 showing ** which is performing processing which downloads external contents (reception) will be displayed on a display 680.

[0064] Moreover, a click of the connection carbon button 912 takes out initiation directions with the step SF 1 shown in drawing 11 to the Maine control section 610 of the user client 600. Thereby, at a step SF 2, the Maine control section 610

is user ID [for identifying a contents user from the other storing region 664 of storage 660] a. It reads. At a step SF 3, the WWW control section 620 transmits the demand information 800 shown in drawing 5 (a) to the contents list server 100 that a contents list should be required.

[0065] At a step SF 4, the contents list server 100 is user ID [within the received demand information 800] a. Processing to attest is performed. After this authentication processing is completed normally, at a step SF 5, the contents list server 100 reads the contents list 810 shown in drawing 5 (b) from contents list / accounting database 110. At a step SF 6, the contents list server 100 performs processing about fixed amount accounting.

[0066] At a step SF 7, the contents list server 100 transmits contents / access key list 840 (refer to drawing 5 (e)) including the information on the access key corresponding to all the contents stored in the contents database 210 and the contents database 310 etc. This contents / access key list 840 consist of URL (URL1 - URLn) and the access key (access key K1 -Kn) in which a contents identifier (content ID C1 - IDCn) and the storing location of the contents concerned are shown, a name (name1 - namen), and an effective date (date1 - daten) which is a contents use term.

[0067] If this contents / access key list 840 are received, at a step SF 9, the Maine control section 610 will read the preservation contents list information 850 (refer to drawing 6 (a)) as a preservation list from the preservation list storing region 663. At a step SF 8, the Maine control section 610 calculates the difference of the contents / access key list 840, and the preservation contents list information 850 which were received, and is taken as the contents demand list 820 on which the count result was shown in drawing 5 (c).

[0068] At a step SF 10, the Maine control section 610 displays the contents demand list 820 on a display 680, and takes a check to a contents user. If a check of a contents user can be taken at a step SF 11, at a step SF 12, the Maine control section 610 will require new contents by transmitting an access key list to the contents server 200, after picking out an access key list from the contents demand list 820. At a step SF 13, the contents server 200 checks each access key contained in an access key list, when this check result is O.K., searches the contents database 210 and takes out the contents corresponding to an access key.

[0069] At a step SF 14, the contents server 200 distributes the enciphered contents to the user client 600 through the Internet 500. At a step SF 15, the

Maine control section 610 decodes the enciphered contents using an access key, after receiving the above-mentioned contents. Moreover, the Maine control section 610 cuts a circuit with the Internet 500.

[0070] At a step SF 17, the Maine control section 610 stores contents in the contents storing region 662. Thereby, the contents which newly received are added to the contents storing region 662. Moreover, the Maine control section 610 performs update process of adding the information about the contents which newly received to the preservation contents list information 850. These received contents are displayed on a display 680 by the browser 650 as a browser screen 930 shown in drawing 8 .

[0071] As explained above, while being able to reduce management of contents [finishing / reception], and the load by the side of the server which distributes contents since the contents which should receive from a server were managed not by the server but by the receiving side (user client 20,600,700) (the contents server 10, the contents list server 100, contents server 200,300), according to the gestalt of 1 operation, the cost concerning server extension can be reduced.

[0072] Moreover, since the contents which cut the connection circuit to a server and were stored in the database off-line were used after reception of contents

was completed, a server can be made according to the gestalt of 1 operation, to reduce communication link cost as compared with the case where contents are used, like before, where a line connection is carried out.

[0073] Although the gestalt of the 1 operation which starts this invention above has been explained in full detail with reference to a drawing, the concrete example of a configuration is not restricted to the gestalt of this 1 operation, and even if the design change of the range which does not deviate from the summary of this invention etc. occurs, it is included in this invention.

[0074] For example, in the gestalt of 1 operation mentioned above, it is made to read into the computer 1000 which showed the information receiving agent which recorded on the record medium 1100 which showed the information receiving agent for realizing the function of the user client 20 or the user client 600 to drawing 12 , and in which computer reading is possible, and was recorded on this record medium 1100 in this drawing, and may be made to realize the function of the user client 20 or the user client 600 by performing.

[0075] The computer 1000 shown in drawing 12 consists of CPU1001 which executes the above-mentioned information receiving agent, the input devices 1002, such as a keyboard and a mouse, ROM (Read Only Memory)1003 which

memorizes various data, RAM (Random Access Memory)1004 which memorizes an operation parameter etc., a reader 1005 which reads an information receiving agent in a record medium 1100, output units 1006, such as a display and a printer, and a bus BU which connects each part of equipment.

[0076] CPU1001 realizes the function mentioned above by performing an information receiving agent, after reading the information receiving agent currently recorded on the record medium 1100 via the reader 1005. In addition, a transmission medium with which it carries out record maintenance of the data temporarily like a network that the record medium of portable molds, such as an optical disk, a floppy (trademark) disk, and a hard disk, is contained from the first is also contained in a record medium 1100.

[0077] Moreover, although the gestalt of 1 operation mentioned above explained the example which used the user client 20 (refer to drawing 1) and the user client 600,700 (refer to drawing 4) as the personal computer, it may replace with these user clients 20,600 and 700, and mobile computing devices (a portable telephone, a PHS terminal, PDA, etc.) equipped with contents reception and a regenerative function may be used. In this example of a configuration, mobile computing devices receive contents from a server through a wireless circuit and

the Internet. In this case, there are few amounts of traffic of a wireless circuit, and they become possible [receiving contents collectively in the time zone when a data transfer rate is quick], and communication link cost is reduced as a result.

[0078] moreover -- the gestalt of 1 operation mentioned above -- a scheduler -- using -- difference -- after performing count (a step SC 8 and a step SF 8), you may make it the communication link tariff after predetermined time progress actually receive contents in a cheap time zone (midnight time zone) In this case, communication link cost is reduced.

[0079] Moreover, with the gestalt of 1 operation mentioned above, the contents of the same contents may be stored in the contents database 210 and the contents database 310 which were shown in drawing 4 , and the configuration which plans a load distribution may be taken. With this configuration, when receiving the same contents by two or more user clients, two or more kinds of contents keys are prepared to the same contents, and these contents keys can distribute to two or more users. According to this configuration, without needing special equipments, such as a load balancer, a load distribution can be realized by low cost and the correspondence at the time of server failure can be taken comfortably.

[0080]

[Effect of the Invention] As explained above, while being able to reduce management of information [finishing / reception], and the load by the side of the server which distributes information, such as contents, since the information which should be received from a server was managed not by the server but by the receiving side according to this invention, the effectiveness that the cost concerning server extension can be reduced is done so.

[0081] Moreover, since according to this invention the information which cut the connection circuit to a server and was stored in the database off-line was used after informational reception was completed, the effectiveness of the ability to make a server reducing communication link cost as compared with the case where information is used, like before, where a line connection is carried out is done so.

[0082] Moreover, since according to this invention communication link cost carries out a line connection to a cheap time zone to a server and was made to perform information reception, the effectiveness that communication link cost can be reduced further is done so.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the outline configuration of the gestalt of the 1 operation concerning this invention.

[Drawing 2] It is a sequence diagram explaining the example 1 of outline

actuation of the gestalt of the same operation.

[Drawing 3] It is a sequence diagram explaining the example 2 of outline actuation of the gestalt of the same operation.

[Drawing 4] It is the block diagram showing the concrete configuration of the gestalt of the same operation.

[Drawing 5] It is drawing showing the various information used with the gestalt of the same operation.

[Drawing 6] It is drawing showing the preservation contents list information 850 and 860 that it is used with the gestalt of the same operation.

[Drawing 7] It is a sequence diagram explaining the example 1 of concrete actuation of the gestalt of the same operation.

[Drawing 8] It is drawing showing screen transition of the display 640 shown in drawing 4 .

[Drawing 9] It is a flow chart explaining the actuation of the user client 600 shown in drawing 4 .

[Drawing 10] the difference shown in drawing 9 -- it is a flow chart explaining computation.

[Drawing 11] It is a sequence diagram explaining the example 2 of concrete

actuation of the gestalt of the same operation.

[Drawing 12] It is the block diagram showing the modification of the gestalt of the same operation.

[Description of Notations]

10 Contents Server

11 Contents List Server

13 Contents Distribution Server

20 User Client

100 Contents List Server

200 Contents Server

600 User Client

610 Maine Control Section

620 WWW Control Section

630 Language-Processing Engine

660 Storage

1000 Computer

1001 CPU

1100 Record Medium